

## **REMARKS**

Applicants wish to thank the Examiner for the careful consideration given this application. Claims 1-7 are pending in this Application. The Office Action states in paragraph 3 that the, "Applicant's amendment and arguments filed on 04/02/2008 have been fully considered and they are found persuasive." These arguments applied to the rejection under 103(a) over Resendes in combination with Cruse. However, the Office Action further adds in paragraph 4 this same rejection but with no comments. In view of the Office's statement that the previously filed Response was persuasive, the Applicant's believe this was an inadvertent error in preparation of the instant Office Action and respectfully request the rejection be expressly withdrawn.

### **Rejections under 35 U.S.C. § 103**

Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,180,710 to Hergenrother et al. (hereinafter "Hergenrother") in view of Cruse. Applicants traverse this ground of rejection.

Hergenrother discloses the incorporation of inorganic salts into precipitated silica improving the filler dispersion in compounded rubber, including halobutyl rubber. *See Hergenrother, Abstract*. Hergenrother further discloses modifying the surface of silica with a silane and/or shielding agent with reactive groups to bind the silica to the rubber reactive groups via chemical bonds that include silane couplers including mercapto functionality. Cruse, on the other hand, discloses the use of sulfur silane coupling agents, including blocked mercaptosilanes, in the manufacture of rubbers. Applicants respectfully submit that it is not obvious to add the sulfur silane coupling agents of Cruse with the technology disclosed in Hergenrother to achieve the present features of the instant claims. As noted, Hergenrother teaches modifying silica with a silane or mercapto silane compound, whereas, Cruse discloses curing the non-halobutyl rubber with blocked mercaptosilanes. As such, one skilled in the art would find no motivation in either reference to combine the two technologies and would not be motivated to use the blocked mercapto silanes of Cruse in curing halobutyl rubber briefly mentioned in Hergenrother. At best, one skilled in the art would combine the references to modify the

silica surfaces according to Hergenrother with blocked mercaptosilanes of Cruse. Moreover, there is no expectation of success of curing halogenated butyl rubber with the blocked mercaptosilanes of Cruse according to the teachings of Hergenrother even if such a combination was possible without other modifications to the system, which is neither hinted to nor disclosed in the references. As stated, the teachings in Hergenrother are directed to modifying silica surface to incorporate the silica onto the rubber and not to cure the rubber composition. There is no indication in the references that using the blocked mercaptosilanes of Cruse would be successful in curing rubber, especially halobutyl rubber, compositions by utilizing the blocked mercaptosilanes to modify the surface of silica as set forth in Hergenrother. As such, one skilled in the art would neither be motivated to combine the references nor find a likelihood of success in combine the references to arrive at the features of instant claim 1.

The Applicants have further showed unexpected results in employing a blocked thiol compound in curing halobutyl rubber compositions over non-halogenated butyl rubber. As shown in the Examples of the present invention, the physical properties based on halogenated butyl are superior to those measured for compounds based on non-halogenated butyl. Examples 3, 5, and 7 (controls) exhibited significantly poorer abrasion resistance and lower values of modulus elongation than those Examples according to the present invention, Examples 2, 4, and 6. Thus, these results would not be expected from the combination of Hergenrother with Cruse. There is no indication in these references that superior properties would be attained by incorporating a blocked thiol modifier in the curing of a halobutyl rubber composition since the combination of Hergenrother with Cruse would be directed to modifying silica surface with blocked mercaptosilanes. Therefore, one skilled in the art would not find the features of the instant claims obvious.

In view of the foregoing remarks, Applicants submit that the pending Claims are in condition for allowance and respectfully request notice to such effect. Should the Examiner have any questions regarding the current claimed invention, he is invited to initiate a telephone conference with the undersigned.

The USPTO is hereby authorized to charge any fees for an extension of time or those under 37 C.F.R. 1.16 or 1.17, which may be required by this paper, and/or to credit any overpayments to Deposit Account No. 50-2527.

Respectfully submitted,



By \_\_\_\_\_

Michael A. Miller  
Attorney for Applicants  
Reg. No. 50,732

LANXESS Corporation  
Law & Intellectual Property Department  
111 RIDC Park West Drive  
Pittsburgh, Pennsylvania 15275-1112  
(412) 809-2233  
FACSIMILE PHONE NUMBER:  
(412) 809-1054

S:\Law Shared\SHARED\PATENTS\8000-8999\8354\8354 Rsp 11-24-2008.DOC